Please **AMEND** the **CLAIMS** as follows:

1.   (Original)   In a Home Agent, a method of maintaining Mobile IP operation, the method comprising:

registering a Mobile Node;

creating a registration entry for the Mobile Node in a mobility binding table; and

sending a multicast message to a virtual router group to which the Home Agent belongs and with which the Home Agent shares a virtual IP address, the multicast message notifying the virtual router group of the registration.

2.   (Original)   The method as recited in claim 1, wherein the Home Agent is not active.

3.   (Original)   The method as recited in claim 1, wherein the Home Agent is in a standby, listening or learn state.

4.   (Original)   The method as recited in claim 1, wherein the Home Agent is in an active state.

5.   (Original)   The method as recited in claim 1, wherein the Home Agent is in a passive state.

6.   (Original)   The method as recited in claim 1, wherein registering a Mobile Node is performed in response to receiving a registration request from the Mobile Node.

7.   (Original)   The method as recited in claim 1, further comprising:

determining whether one or more Home Agents other than the Home Agent

are in the virtual router group prior to sending the multicast message.

8.   (Currently Amended) The method as recited in claim 1, further comprising:

determining whether an acknowledgement to the multicast message has been received from another Home Agent in the virtual router group; and

when it is determined that an acknowledgement has not been received from the Home Agent in the virtual router group, retransmitting a message to the Home Agent notifying the Home Agent of the registration.

9.   (Original)   The method as recited in claim 1, further comprising:

prior to registering a mobile node, sending a multicast mobility binding table request to the virtual router group indicating that bindings present in a mobility binding table maintained by one or more members of the virtual router group are requested.

10.   (Original)   The method as recited in claim 9, wherein sending a multicast mobility binding table request is performed prior to assuming Home Agent responsibilities with the virtual router group.

11.   (Original)   The method as recited in claim 9, wherein the multicast mobility binding table request includes a Home Agent identifier associated with the Home Agent.

12.   (Original)   The method as recited in claim 9, further comprising:

receiving one or more reply messages including one or more bindings associated with one or more mobile nodes; and

updating the mobility binding table maintained by the Home Agent with the bindings received in the reply messages.

13.   (Original)   The method as recited in claim 9, further comprising:

determining whether one or more Home Agents other than the Home Agent are in the virtual router group prior to sending the multicast mobility binding table

request.

14. (Original) The method as recited in claim 1, further comprising:

receiving a multicast mobility binding table request from another Home Agent in the virtual router group, the multicast mobility binding table request being addressed to the virtual router group and indicating that bindings present in a mobility binding table maintained by members of the virtual router group are requested.

15. (Original) The method as recited in claim 14, wherein the multicast mobility binding table request includes a Home Agent identifier associated with another Home Agent that has sent the multicast mobility binding table request, the method further comprising:

storing the Home Agent identifier in a list of Home Agents in the virtual router group.

16. (Original) The method as recited in claim 14, further comprising:

sending one or more reply messages to the Home Agent in the virtual router group from which the multicast mobility binding table request was received, the reply messages including one or more bindings associated with one or more mobile nodes from the binding table maintained by the Home Agent.

17. (Original) The method as recited in claim 16, wherein the Home Agent is designated as one of a plurality of Home Agents in the virtual router group to respond to mobility binding table requests.

18. (Original) The method as recited in claim 16, further comprising:

determining whether an acknowledgement to the reply messages has been received from the Home Agent in the virtual router group;

when it is determined that an acknowledgement has not been received from the Home Agent in the virtual router group, retransmitting one or more of the reply messages to the Home Agent.

19.   (Original)   The method as recited in claim 16, further comprising:

sending a reply message including one or more Home Agent identifiers identifying Home Agents in the virtual router group.

20.   (Original)   The method as recited in claim 14, further comprising:

sending a reply message including one or more Home Agent identifiers identifying Home Agents in the virtual router group, the one or more Home Agent identifiers being obtained from a list maintained by the Home Agent.

21.   (Original)   The method as recited in claim 20, further comprising:

determining whether an acknowledgement to the reply messages has been received from the Home Agent in the virtual router group;

when it is determined that an acknowledgement has not been received from the Home Agent in the virtual router group, retransmitting the reply message to the Home Agent.

22.   (Original)   The method as recited in claim 14, further comprising:

sending a binding table reply indicating that the mobility binding table maintained by the Home Agent is not initialized with bindings from other Home Agents in the virtual router group.

23.   (Original)   The method as recited in claim 1, further comprising:

de-registering the mobile node;

updating the registration entry in the mobility binding table for the Mobile Node; and

sending a multicast message to the virtual router group to which the Home Agent belongs and with which the Home Agent shares a virtual IP address, the multicast message notifying the virtual router group of the de-registration.

24.   (Original)   The method as recited in claim 1, wherein the Home Agent

implements a routing redundancy protocol.

25. (Original) The method as recited in claim 24, wherein the routing redundancy protocol is one of HSRP and VRRP.

26. (Original) In a Home Agent, the Home Agent being a member of a redundancy group including one or more Home Agents, a method of providing Mobile IP redundancy, the method comprising:

sending a multicast mobility binding table request to the redundancy group indicating that bindings present in a mobility binding table maintained by one or more members of the redundancy group are requested;

receiving one or more reply messages including one or more bindings associated with one or more mobile nodes; and

updating a mobility binding table maintained by the Home Agent with the bindings received in the reply messages.

27. (Original) The method as recited in claim 26, wherein the Home Agent is not active.

28. (Original) The method as recited in claim 26, wherein the Home Agent is in a passive state.

29. (Original) The method as recited in claim 26, wherein the Home Agent is in a standby, listening, or learn state.

30. (Original) The method as recited in claim 26, wherein the multicast mobility binding table request includes a Home Agent identifier associated with the Home Agent.

31. (Original) The method as recited in claim 26, further comprising:

receiving one or more reply messages including one or more Home Agent

identifiers identifying Home Agents in the redundancy group; and

updating a list of Home Agents in the redundancy group such that the list includes the Home Agent identifiers.

32. (Original) The method as recited in claim 26, further comprising:
determining whether one or more Home Agents other than Home Agent are in the virtual router group prior to sending the multicast mobility binding table request.

33. (Original) The method as recited in claim 26, further comprising:
receiving a binding table update including a binding associated with a mobile node that has registered with another Home Agent; and

updating the mobility binding table maintained by the Home Agent to include the binding.

34. (Original) The method as recited in claim 33, wherein the another Home Agent is in a passive state.

35. (Original) The method as recited in claim 33, wherein the another Home Agent is in an active state.

36. (Original) The method as recited in claim 33, further comprising:
sending an acknowledgement of receipt of the binding table update.

37. (Original) The method as recited in claim 33, further comprising:

receiving a binding table update indicating that the mobile node is no longer registered with the another Home Agent; and

updating the mobility binding table maintained by the Home Agent to remove the binding.

38.   (Currently Amended) The method as recited in claim 26, further comprising:

receiving a binding table update indicating that a specified mobile node is no longer registered with the another Home Agent; and

determining whether a binding exists in the mobility binding table maintained by the Home Agent for the specified mobile node;

when it is determined that a binding exists in the mobility binding table maintained by the Home Agent for the specified mobile node, removing the binding from the mobility binding table; and

when it is determined that a binding does not exist in the mobility binding table maintained by the Home Agent for the specified mobile node, creating an entry in the mobility binding table for the specified mobile node and marking the entry as deleted.

39.   (Original)   The method as recited in claim 38, further comprising:

purging the created entry after a specified period of time.

40.   (Original)   The method as recited in claim 26, wherein the Home Agent implements a routing redundancy protocol.

41.   (Original)   The method as recited in claim 40, wherein the routing redundancy protocol is one of HSRP and VRRP.

42.   (Original)   The method as recited in claim 26, further comprising:

receiving a multicast mobility binding table request from another Home Agent in the virtual router group, the multicast mobility binding table request being addressed to the virtual router group and indicating that bindings present in a mobility binding table maintained by members of the virtual router group are requested.

43.   (Original)   The method as recited in claim 42, wherein the multicast mobility binding table request includes a Home Agent identifier associated with another Home Agent that has sent the multicast mobility binding table request, the

method further comprising:

storing the Home Agent identifier in a list of Home Agents in the virtual router group.

44.   (Original)   The method as recited in claim 42, further comprising:

sending one or more reply messages to the Home Agent in the virtual router group from which the multicast mobility binding table request was received, the reply messages including one or more bindings associated with one or more mobile nodes from the binding table maintained by the Home Agent.

45.   (Original)   The method as recited in claim 44, further comprising:

determining whether an acknowledgement to the reply messages has been received from the Home Agent in the virtual router group;

when it is determined that an acknowledgement has not been received from the Home Agent in the virtual router group, retransmitting one or more of the reply messages to the Home Agent.

46.   (Original)   The method as recited in claim 44, further comprising:

sending a reply message including one or more Home Agent identifiers identifying Home Agents in the virtual router group.

47.   (Original)   The method as recited in claim 42, further comprising:

sending a reply message including one or more Home Agent identifiers identifying Home Agents in the virtual router group, the one or more Home Agent identifiers being obtained from a list maintained by the Home Agent.

48.   (Original)   The method as recited in claim 47, further comprising:

determining whether an acknowledgement to the reply messages has been received from the Home Agent in the virtual router group;

when it is determined that an acknowledgement has not been received from the Home Agent in the virtual router group, retransmitting the reply message to the Home Agent.

49.   (Original)   The method as recited in claim 42, further comprising:

sending a binding table reply indicating that the mobility binding table maintained by the Home Agent is not initialized with bindings from other Home Agents in the virtual router group.

50.   (Currently Amended) A computer-readable medium storing thereon computer-readable instructions for performing a method of maintaining Mobile IP operation in a Home Agent, comprising:

instructions for registering a Mobile Node with the Home Agent;

instructions for creating a registration entry for the Mobile Node in a mobility binding table located at the Home Agent; and

instructions for sending a multicast message to a virtual router group to which the Home Agent belongs and with which the Home Agent shares a virtual IP address, the multicast message notifying the virtual router group of the registration.

51.   (Currently Amended) An apparatus adapted for maintaining Mobile IP operation in a Home Agent, comprising:

a processor; and

a memory, at least one of the processor and the memory being adapted for:

registering a Mobile Node;

creating a registration entry for the Mobile Node in a mobility binding table; and

sending a multicast message to a virtual router group to which the Home Agent belongs and with which the Home Agent shares a virtual IP address, the multicast message notifying the virtual router group of the registration.

52.   (Currently Amended) An apparatus adapted for maintaining Mobile IP operation in a Home Agent, comprising:

means for registering a Mobile Node;

means for creating a registration entry for the Mobile Node in a mobility binding table; and

means for sending a multicast message to a virtual router group to which the

Home Agent belongs and with which the Home Agent shares a virtual IP address, the multicast message notifying the virtual router group of the registration.

53.   (Currently Amended) A   computer-readable   medium   storing   thereon computer-readable instructions for providing Mobile IP redundancy in a Home Agent, the Home Agent being a member of a redundancy group including one or more Home Agents, comprising:

instructions for sending a multicast mobility binding table request at the Home Agent to the redundancy group indicating that bindings present in a mobility binding table maintained by one or more members of the redundancy group are requested;

instructions for receiving one or more reply messages at the Home Agent including one or more bindings associated with one or more mobile nodes; and

instructions for updating a mobility binding table maintained by the Home Agent with the bindings received in the reply messages.

54.   (Currently Amended) An apparatus adapted for providing Mobile IP redundancy in a Home Agent, the Home Agent being a member of a redundancy group including one or more Home Agents, comprising:

a processor; and

a memory, at least one of the processor and the memory being adapted for:

sending a multicast mobility binding table request to the redundancy group indicating that bindings present in a mobility binding table maintained by one or more members of the redundancy group are requested;

receiving one or more reply messages including one or more bindings associated with one or more mobile nodes; and

updating a mobility binding table maintained by the Home Agent with the bindings received in the reply messages.

55.   (Currently Amended) An apparatus adapted for providing Mobile IP redundancy in a Home Agent, the Home Agent being a member of a redundancy group including one or more Home Agents, comprising:

means for sending a multicast mobility binding table request to the

redundancy group indicating that bindings present in a mobility binding table maintained by one or more members of the redundancy group are requested;

means for receiving one or more reply messages including one or more bindings associated with one or more mobile nodes; and

means for updating a mobility binding table maintained by the Home Agent with the bindings received in the reply messages.